

REMARKS

Applicants acknowledge receipt of an Office Action dated April 17, 2003. In this response Applicants have added claims 28 and 29. Support for these amendments may be found in the specification, *inter alia*, on pages 8-12. Following entry of these amendments, claims 1-13, 15-16, and 18-29 are pending in the application.

Reconsideration of the present application is respectfully requested in view of the foregoing amendments and the remarks which follow.

Interview

Applicants acknowledge, with appreciation, the courtesies extended to Mr. Paul Strain by Examiner Hon during an interview conducted on October 14, 2003. During the interview, Mr. Strain and Examiner Hon discussed the outstanding rejection based on U.S. Patent 5,928,737. Further to the discussion during the interview, Applicants submit herewith an IDS citing the published priority document for U.S. Patent 5,928,737, DE 44 38 961 A1 which was nominally published on May 2, 1996.

Rejections Under 35 U.S.C. §103

Metzger in view of Andersen

On page 2 of the Office Action, the PTO has rejected claims 1-5, 7, 10-12, 16, 18-19, 20 and 22-27 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,681,517 to Metzger (hereafter "Metzger") in view of U.S. Patent 5,679,145 to Andersen *et al.* (hereafter "Andersen"). Applicants respectfully traverse this rejection for the reasons set forth below.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the

reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143. Here, Applicants submit that the PTO has failed to provide a proper suggestion or motivation for combining Metzger and Andersen.

Metzger relates to a method of producing a casein film. The film is made from a swollen aqueous mixture of a partly volatile carboxylic acid, a plasticizer and casein (col. 2, lines 22 - 26), which is in turn deformed to obtain a film, *e.g.* by extruding it through a ring die. The film is subsequently solidified and dried. Solidification is achieved by treating it with an aqueous hardening solution or by cold-smoking. The hardening solution may contain glycerol, but the glycerol does not act as a crosslinking agent.

The swollen aqueous mixture of Metzger contains 400 to 500 g of water per 1,000 g of casein (col. 3, lines 16-17), and may further contain glycerol as a plasticizer. The considerable amount of water makes a drying step necessary. In contrast, the presently claimed edible shaped bodies do not require any drying step, and also do not require any subsequent hardening. Following step "d)" as recited in present claim 1 (calendering, stretching or blowing), the edible body is ready for use, *e.g.* ready to be filled with the meat-stuffing.

Although Metzger refers to "thermoplastic methods" when discussing the prior art (see col. 1, lines 46-65), he never uses the term "thermoplastic" in conjunction with his casein films. Applicants note that a "thermoplastic method" in fact encompasses the action of heat and pressure to form a molten thermoplastic mass. In contrast, the aqueous mass as described by Metzger the casein powder is simply swollen in a mixture of water, a partly volatile carboxylic acid and a plasticizer. There is no melting observed. Thus, the mass of Metzger cannot be regarded as a "thermoplastic mass" within the generally accepted meaning of this phrase. The presently claimed edible shaped body is not only produced in a way different from that taught by Metzger, it also has different properties and therefor constitutes a different product, since it contains fibers which are not disclosed or contemplated by Metzger.

In order to resolve the foregoing deficiencies in Metzger, the PTO has attempted to combine Metzger with Andersen. Andersen, however, fails to cure Metzger's deficiencies. Andersen relates to starch-based compositions containing uniformly dispersed fibers and articles having a foamed, fiber-reinforced, starch-bound structural matrix made from those compositions (col. 6, lines 31-35). The articles having the foamed, starch-based matrix are used as containers, particularly food and beverage containers (see abstract). The fibers serve to improve the toughness of the articles.

Andersen fails to contemplate edible shaped articles. In col. 3, line 57 *et seq.*, it is only disclosed that known edible, starch-based sheets are brittle and fragile when they contain too little moisture. According to Andersen fibers improve the fracture energy and toughness of the article (col. 13, lines 32-33). Andersen's preferred fibers are softwood-fibers having an average length of about 3.5 mm. There is no disclosure that the fibers could be edible or could be used in edible shaped articles. Edibility is not an issue for Andersen.

Accordingly, Applicants submit that a person of ordinary skill in the art hence would not have been motivated to employ the fibers as taught by Andersen (for use in a foamed article) in the edible film of Metzger since Andersen states that the addition of fibers improves fracture energy and toughness. Applicants further note that those skilled in the art recognize that edible films should not be tough, rather these films should be chewable. For the foregoing reasons, Applicants submit that the rejection of claim 1 is improper and should be withdrawn.

If an independent claim is nonobvious under §103, then any claim depending therefrom is nonobvious. *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988). See MPEP 2143.03. Thus, Applicants submit that claims 2-5, 7, 10-12, 16, 18-19, 20 and 22-27, which ultimately depend from independent claim 1, are also non-obvious.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of this rejection under §103.

Hammer

On page 4 of the Office Action, the PTO has rejected claims 1-10, 12-13, 15, 18-20 and 23-27 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,928,737 to Hammer *et al.* (hereafter “Hammer”). Applicants respectfully traverse this rejection for the reasons set forth below.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 580 (CCPA 1974). See MPEP §2143.03. Here, Applicants submit that Hammer fails to teach or fairly suggest an edible shaped body as set forth in independent claim 1.

Hammer focuses on sausage casings which are biodegradable, but not edible. Thus, the sausage casing according to Example 2 of Hammer shows an elongation at break (in the dry state) of about 80 % in longitudinal direction and about 100 % in cross direction. The non-fiber-reinforced casing according to Example 3 of the reference shows an elongation at break which is only slightly less than that. In contrast, the edible casing of the presently claimed invention has an elongation at break (in the dry state) of about 15 % or less in the longitudinal direction and about 20 % in cross direction. It is commonly known to those skilled in the pertinent art that casings with an elongation at break (in the dry state) in the range of the casings of Hammer are no longer chewable and hence cannot be regarded as “edible”.

The casings of Hammer are intended in particular for long-lasting sausages. This requires a strong casing having a high wall thickness, which is easily peelable. Edibility is not an issue. Thus, Hammer does not teach or suggest an edible shaped body in the form of a flat or tubular film with a wall thickness of from 20 to 60 µm. For these reasons, Applicants submit that the outstanding rejection of claim 1 based on Hammer is improper and should be withdrawn.

If an independent claim is nonobvious under §103, then any claim depending therefrom is nonobvious. *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988). See MPEP 2143.03. Thus, Applicants submit that claims 2-10, 12-13, 15, 18-20 and 23-27, which ultimately depend from independent claim 1, are also non-obvious.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of this rejection under §103.

Lim in view of Anderson and Metzger

On page 5 of the Office Action, the PTO has rejected claims 1-13, 16 and 18-27 under 35 U.S.C. §103(a) as being unpatentable over WO 93/19125 to Lim *et al.* (hereafter "Lim") in view of Andersen and Metzger. Applicants respectfully traverse this rejection for the reasons set forth below.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143.

The PTO has suggested, in paragraph 6 of the Office Action, that it would have been obvious to one of ordinary skill in the art to have added the fibers of Andersen to the starch composition of Lim in order to obtain edible molded articles with improved fracture toughness. Furthermore, the PTO suggested that it would have been obvious to one of ordinary skill in the art to have used the teachings of Metzger in the invention of Lim in order to obtain an edible casing with the desired wall thickness. Applicants respectfully disagree.

The primary reference, Lim, relates to a biodegradable thermoplastic composition comprising a crosslinked mixture of a native or modified starch with a protein. The starch-protein composition may be formed by blow-molding and other molding processes into shaped bodies such as sheets, films, trays, bottles, tubings or the like (page 11, line 17 - page 12, line 11). Foamed products, such as packaging, loose fills, foamed dishes and cups are also disclosed (page 12, lines 4-5). When the shaped bodies are comprised entirely of

components that are edible by a human, they may be consumed by the user together with the package contents (page 12, lines 16-28).

Furthermore, Lim discloses a rather complicated process for the preparation of the molded articles. Lim's process requires formation of an aqueous or aqueous-alcoholic solution containing the starch, the protein and the crosslinker and, subsequently drying the mixture to a water content of 3 to 35 % by weight (see claim 16 in the reference). Compared therewith, the production of the presently claimed article is much easier. It requires nothing more than mixing together the starting materials, melting the resultant mixture to give a thermoplastic mass, extruding the mass and forming it by calendering, stretching or blowing. Lim fails to teach or fairly suggest the inclusion of fibers in an edible shaped body. The PTO attempts to resolve this deficiency by combining Lim with Andersen.

The secondary reference, Andersen, relates to starch-based compositions having uniformly dispersed fibers, as well as articles having a foamed, fiber-reinforced starch-bound structural matrix made from such compositions (col. 6, lines 31-35). To uniformly disperse the fibers, the moldable composition initially comprises water which begins to vaporize when the temperature of the composition in contact with the mold reaches or exceeds 100 °C (col. 35, lines 11-58). The amount of water is relatively high. Andersen states that the amount of water is preferably in a range of from 15 to 80 % by weight of the composition (col. 44, lines 25-28). As a result, the volume of the composition expands and a foamed structural matrix is formed. Furthermore, it is disclosed that the fibers have an average length preferably greater than about 2 mm and up to above 25 mm. Fibers having a length of less than 1 mm are not preferred in the invention of Andersen since the pore size in the foamed structural matrix can be 0.25 mm or higher and short fibers would span only across a few of the pores (col. 46, lines 22-28).

The incorporation of fibers in the articles of Lim would result in a foamed product made from a crosslinked starch-protein composition having fibers embedded therein. By the process steps recited in present claim 1 such a foamed product could not be formed, since the final step here is calendering and/or stretching or blowing the extrudate. A cellular structure

comprising pores could not be formed by such a process. The combination of the teachings of Lim and of Andersen thus cannot render obvious the presently claimed edible shaped body.

Applicants note that the PTO has combined Lim and Andersen with Metzger. Metzger, however, Adds nothing to resolve these fundamental deficiencies in Lim and Andersen. Applicants therefore submit that none of the cited references, taken either individually or in combination, teach or properly suggest all of the features of independent claim 1.

If an independent claim is nonobvious under §103, then any claim depending therefrom is nonobvious. *In re Fine*, 5 USPQ2d 1596 (Fed. Cir. 1988). See MPEP 2143.03. Thus, Applicants submit that claims 2-13, 16 and 18-27, which ultimately depend from claim 1, are also non-obvious.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of this rejection under §103.

Newly Added Claims

In this response, Applicants have added claims 28 and 29. Both claim 28 and claim 29 depend from claim 1, which Applicants submit is allowable for the reasons set forth above. With regard to claim 28, Applicants note that Hammer fails to teach or fairly suggest an edible shaped body exhibits a longitudinal elongation at break of 12-15%. Further, with regard to claim 29, Applicants note that edible shaped body exhibits a transverse elongation at break of 20-26%.

CONCLUSION

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of

papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date 10/17/03

FOLEY & LARDNER

Customer Number: 22428

Telephone: (202) 672-5414

Facsimile: (202) 672-5399

By 

Reg. No. 47,369

Richard L. Schwaab

Attorney for Applicant

Registration No. 25,479

Paul D. Strain

Agent for Applicant

Registration No. 47,369